IN THE CLAIMS:

In order to clarify the present status of the claims, Applicant lists all of the claims as Applicant believes they currently stand.

For the purposes of this amendment, please amend claims 1, 8, 18-24, 33, and 39 as follows:

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1. (Amended) A process for depositing a tungsten silicide film on a substrate comprising: depositing a nucleation layer of tungsten silicide [(WSi_x)] on the substrate using a (CVD) process with a silane (SiH_4) silicon source gas and a reactant gas; and depositing a film of tungsten silicide [(WSi_x)] on the nucleation layer using a (CVD) process by switching to dichlorosilane (SiH_2Cl_2) as a silicon source gas such that the dichlorosilane gas reacts with the reactant gas to form the tungsten silicide film at a temperature of less than about 500°C.

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2. The process as recited in claim 1 and wherein:
a reactant gas for reaction with the silane and the dichlorosilane is tungsten [hexaflouride] hexafluoride (WF_6).

3. (Twice Amended) The process as recited in claim [2] 1 [and wherein] further including:
[the (CVD) process is carried] carrying out each of the (CVD) processes in a cold wall (CVD) reaction chamber.

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4. (Twice Amended) The process as recited in claim [3] 1 [and wherein] further including:
[the (CVD) process is carried] carrying out each of the (CVD) processes at a temperature of about 400°C. or less.

5. The process as recited in claim [4] 1 and wherein:
the nucleation layer is formed with discontinuities or to a very thin thickness on the substrate.

6. The process as recited in claim [5] 1 [and wherein] further including:
[a premix chamber is used to mix] mixing the silane or dichlorosilane silicon source gas, the reactant gas and a carrier gas in a premix chamber.

7. The process as recited in claim 6 and wherein:
a flow rate of the carrier gas is about five to ten times a flow rate of the silane or dichlorosilane silicon source gas.

8. (Amended) A semiconductor manufacturing process for depositing a tungsten silicide film on a substrate comprising:
depositing a thin or discontinuous nucleation layer of tungsten silicide [(WSi_x)] on the substrate using a (CVD) process and reacting a silane (SiH_4) silicon source gas with a reactant gas in a CVD system having a premix chamber for combining the silicon source gas and the reactant gas; and
depositing a film of tungsten silicide [(WSi_x)] on the nucleation layer using a (CVD) process by switching to dichlorosilane (SiH_2Cl_2) as a silicon source gas such that the dichlorosilane gas reacts with the reactant gas to form the tungsten silicide film at a temperature of less than about 500°C.

9. The semiconductor manufacturing process as recited in claim 8 and wherein:
the reactant gas is tungsten hexafluoride (WF_6).

10. (Twice Amended) The semiconductor manufacturing process as recited in claim [9] 8 [and wherein] further including:

Cond D4 E4 [the (CVD) process is performed] performing each of the (CVD) processes in a cold wall (CVD) system.

11. The semiconductor manufacturing process as recited in claim 10 and wherein: the cold wall (CVD) system includes the premix chamber, a reaction chamber, a graphite boat for holding a plurality of silicon wafers, and means for heating the silicon wafers.

12. The semiconductor manufacturing process as recited in claim [11] 8 and wherein: the substrate is silicon wafers and the wafers are heated to a temperature of between 200° to 500°C.

13. The semiconductor manufacturing process as recited in claim [12] 8 and wherein: deposition of the nucleation layer occurs in about 1 to about 25 seconds.

14. The semiconductor manufacturing process as recited in claim [13] 8 and wherein: a carrier gas includes a mixture of Argon, Nitrogen, and Helium.

15. The semiconductor manufacturing process as recited in claim 14 and wherein:
a flow rate of the silane silicon source gas is about 400 sccm;
a flow rate of the reactant gas is about 4 sccm; and
a flow rate of the carrier gas is about 2800 sccm.

16. The semiconductor manufacturing process as recited in claim 1 and wherein: said depositing said nucleation layer of tungsten silicide and said depositing said film of tungsten silicide occur at a substantially equivalent temperature.

17. The semiconductor manufacturing process as recited in claim 8 and wherein: said depositing said thin or discontinuous layer of tungsten silicide and said depositing said film of tungsten silicide occur at a substantially equivalent temperature.

18. (Twice Amended) A process for depositing a tungsten silicide film on a substrate using a (CVD) process, comprising:

introducing said substrate into a reaction chamber of said (CVD) process; added Amended

depositing a tungsten silicide nucleation layer on said substrate by introducing a silane silicon source gas and a reactant gas into said reaction chamber such that said silane silicon source gas reacts with said reactant gas to form the tungsten silicide nucleation layer; and

depositing a film of tungsten silicide on said nucleation layer of tungsten silicide by switching said silane silicon source gas to a dicholorosilane silicon source gas such that the dicholorosilane silicon source gas reacts with the reactant gas to form the tungsten silicide film, said switching said silane silicon source gas to said dicholorosilane silicon source gas occurring without interrupting said (CVD) process, wherein said depositing said tungsten silicide nucleation layer and said depositing said film of tungsten silicide occur at a substantially equivalent temperature. no change

19. (Amended) The process as recited in claim 18 further including:

introducing tungsten hexafluoride (WF_6) as a reactant gas for reaction with the silane silicon source gas and the dichlorosilane silicon source gas.

20. (Twice Amended) The process as recited in claim 18 further including:

carrying out the deposition of said tungsten silicide nucleation layer and said tungsten silicide film in a cold wall (CVD) reaction chamber.

21. (Twice Amended) The process as recited in claim 18 further including:
carrying out the deposition of said tungsten silicide nucleation layer and said tungsten silicide film at a temperature of about 400°C or less.

22. (Amended) The process as recited in claim 18 further including:
mixing the silane silicon source gas or dichlorosilane silicon source gas, the reactant gas, and a carrier gas in a premix chamber.

23. (Amended) The process as recited in claim 22 wherein:
a flow rate of the carrier gas is about five to ten times a flow rate of said silane silicon source gas or said dichlorosilane silicon source gas.

24. (Amended) A semiconductor manufacturing process for depositing a tungsten silicide film on a substrate comprising:
depositing a discontinuous nucleation layer of tungsten silicide on the substrate using a (CVD) process and reacting a silane (SiH_4) silicon source gas with a reactant gas in a CVD system having a premix chamber for combining the silicon source gas and the reactant gas; and
depositing a film of tungsten silicide on the discontinuous nucleation layer using a (CVD) process by switching to dichlorosilane (SiH_2Cl_2) as a silicon source gas such that the dichlorosilane gas reacts with the reactant gas to form the tungsten silicide film.

25. The semiconductor manufacturing process as recited in claim 24 and wherein:
said depositing said discontinuous nucleation layer of tungsten silicide and said depositing said film of tungsten silicide occur at a substantially equivalent temperature.

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26. The semiconductor manufacturing process as recited in claim 24 further including: introducing tungsten hexafluoride (WF_6) as the reactant gas.

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27. (Amended) The semiconductor manufacturing process as recited in claim 24 further including:
performing each of the (CVD) processes in a cold wall (CVD) system.

28. The semiconductor manufacturing process as recited in claim 27 wherein: the cold wall (CVD) system includes the premix chamber, a reaction chamber, a graphite boat for holding a plurality of silicon wafers, and means for heating the silicon wafers.

29. The semiconductor manufacturing process as recited in claim 24 wherein: heating the substrate to a temperature of between about 200° and 500°C., and wherein said substrate comprises a silicon wafer.

30. The semiconductor manufacturing process as recited in claim 24 further including: depositing of the discontinuous nucleation layer for a timespan between about 1 and 25 seconds.

31. The semiconductor manufacturing process as recited in claim 24 further including: a carrier gas comprising a mixture of Argon, Nitrogen, and Helium.

32. The semiconductor manufacturing process as recited in claim 31 further including:
introducing the silane silicon source gas at about 400 sccm;
introducing the reactant gas at about 4 sccm; and
introducing a carrier gas at about 2800 sccm.

33. (Three times Amended) A process for depositing a tungsten silicide film on a substrate consisting essentially of:

depositing a discontinuous nucleation layer of tungsten silicide on the substrate using a (CVD) process with a silane (SiH_4) silicon source gas and a reactant gas;

depositing a film of tungsten silicide on the discontinuous nucleation layer using a (CVD) process by switching to dichlorosilane (SiH_2Cl_2) as a silicon source gas such that the dichlorosilane gas reacts with the reactant gas to form the tungsten silicide film; and

wherein said depositing said discontinuous nucleation layer of tungsten silicide and said depositing said film of tungsten silicide occur at a substantially equivalent temperature.

34. The process as recited in claim 33 further including:

introducing tungsten hexafluoride (WF_6) as a reactant gas for reaction with the silane and the dichlorosilane.

35. The process as recited in claim 33 further including:

carrying out each of the (CVD) processes in a cold wall (CVD) reaction chamber.

36. The process as recited in claim 33 further including:

carrying out each of the (CVD) processes at a temperature of about 400°C. or less.

37. The process as recited in claim 33 further including:

mixing the silane or dichlorosilane silicon source gas, the reactant gas and a carrier gas in a premix chamber.

38. The process as recited in claim 37 wherein:

a flow rate of the carrier gas is about five to ten times a flow rate of the silane or dichlorosilane silicon source gas.

39. (Amended) A semiconductor manufacturing process for depositing a tungsten silicide film on a substrate consisting essentially of:

depositing a discontinuous nucleation layer of tungsten silicide on the substrate using a (CVD) process and reacting a silane (SiH_4) silicon source gas with a reactant gas in a CVD system having a premix chamber for combining the silicon source gas and the reactant gas; and

depositing a film of tungsten silicide on the discontinuous nucleation layer using a (CVD) process by switching to dichlorosilane (SiH_2Cl_2) as a silicon source gas such that the dichlorosilane gas reacts with the reactant gas to form the tungsten silicide film.

40. The semiconductor manufacturing process as recited in claim 39 and wherein:

said depositing said discontinuous nucleation layer of tungsten silicide and said depositing said film of tungsten silicide occur at a substantially equivalent temperature.

41. The semiconductor manufacturing process as recited in claim 39 further including:

introducing tungsten hexafluoride (WF_6) as the reactant gas.

42. The semiconductor manufacturing process as recited in claim 39 further including:

performing each of the (CVD) processes in a cold wall (CVD) system.

43. The semiconductor manufacturing process as recited in claim 42 wherein:

the cold wall (CVD) system includes the premix chamber, a reaction chamber, a graphite boat for holding a plurality of silicon wafers, and means for heating the silicon wafers.

44. The semiconductor manufacturing process as recited in claim 39 wherein:

heating the substrate to a temperature of between about 200° and 500°C., and wherein said substrate comprises a silicon wafer.

45. The semiconductor manufacturing process as recited in claim 39 further including: depositing of the discontinuous nucleation layer for a timespan between about 1 and 25 seconds.

46. The semiconductor manufacturing process as recited in claim 39 further including: a carrier gas comprising a mixture of Argon, Nitrogen, and Helium.

47. The semiconductor manufacturing process as recited in claim 46 further including:
introducing the silane silicon source gas at about 400 sccm;
introducing the reactant gas at about 4 sccm; and
introducing a carrier gas at about 2800 sccm.

SUPPORT FOR AMENDMENTS

By this amendment, Applicant requests that claims 1, 8, 18, 24, 33, and 39 be amended to remove (WSi_x) from each of the respective claims. Support for these amendments is found specifically in the specification at column 2, lines 31-36. Furthermore, the entire Description of Preferred Embodiments is directed towards the deposition of a tungsten silicide film on a substrate, which supports the amendments.

Applicant also requests that claims 18-23 be amended as recited herein. The amendments to claims 18-23 find support in the specification between column 3, line 4, and column 4, line 5. Claim 18 includes an additional step of "introducing said substrate into a reaction chamber of said (CVD) process." This amendment finds support in column 3, at lines 6-8. Furthermore, the claim language relating to the switching of the silicon source gas from silane to dichlorosilane finds support at column 3, lines 35-39, and between column 3, line 67 and column 4, line 3. Claims 19-23 were previously supported by the specification. The amendments to claims 19-23 are provided to maintain consistency with the amended language of claim 18, and as such, the content of claims 19-23 has not changed. Therefore, claims 19-23 remain supported by the specification.